



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,025	09/05/2003	Martin Hoheisel	32860-000624/US	5214
30596	7590	05/09/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			HO, ALLEN C	
P.O.BOX 8910			ART UNIT	
RESTON, VA 20195			PAPER NUMBER	
			2882	

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/655,025

Applicant(s)

HOHEISEL ET AL.

Examiner

Allen C. Ho

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 13-18, 20 and 23-34 is/are rejected.
- 7) ☒ Claim(s) 7, 9-12, 19, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-3, 8, 13-17, 20, 23-26, 31-34 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,951,628 B2 in view of Guru *et al.* (U. S. Patent No. 6,175,615 B1).

With regard to claims 1, 3, 8, 13-17, 25, 26, U. S. Patent No. 6,951,628 B2 claims a method for producing at least one of an antiscatter grid and collimator comprising: producing a basic structure (base body) through layer-wise solidification by using a rapid prototyping technique to form transmission channels (transmissive regions) an intermediate walls (nontransmissive regions) of at least of the antiscatter grid and collimator; coating the

Art Unit: 2882

intermediate walls with a material which strongly absorbs at least one of x-radiation and gamma radiation (claim 4).

However, U. S. Patent No. 6,951,628 B2 does not claim that the step of producing a basic structure includes at least in a first direction a center-to-center spacing at least one of equal to and an integral multiple of a center-to-center spacing of the sensitive detection regions of the detector, and a step of applying at least one of the antiscatter grid and collimator to the detector surface and connecting at least one of the antiscatter grid and collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

Guru *et al.* disclosed an antiscatter grid or a collimator having a basic structure (100) including at least in a first direction a center-to-center spacing at least one of equal to and an integral multiple of a center-to-center spacing of the sensitive detection regions (42) of the detector (40), the antiscatter grid or the collimator is connected to the detector surface in such a way that at least one of the intermediate walls (101) running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to produce a basic structure including at least in a first direction a center-to-center spacing at least one of equal to and an integral multiple of a center-to-center spacing of the sensitive detection regions of the detector and apply at least one of the antiscatter grid and collimator to the detector surface and connecting at least one of the antiscatter grid and

Art Unit: 2882

collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface, since a person would be motivated to allow only radiations that are emanated directly from the radiation source to reach the detection regions.

With regard to claims 2, 20, 23, and 24, U. S. Patent No. 6,951,628 B2 claims the method as claimed in claim 1. However, U. S. Patent No. 6,951,628 B2 does not claim stereolithography as the rapid prototyping technique.

Guru *et al.* disclosed a rapid prototyping technique that uses stereolithography (column 4, lines 48-62). Guru *et al.* taught that CAD/STL files allow revisions of design parameters (column 5, lines 41-48).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use stereolithography as the rapid prototyping technique, since a person would be motivated to adopt a rapid prototyping technique that allows convenient modification of design parameters.

With regard to claims 31, 33, and 34, U. S. Patent No. 6,951,628 B2 claims a method for producing at least one of an antiscatter grid and collimator comprising: forming transmission channels (transmissive regions) and intermediate walls (nontransmissive regions) of at least one of the antiscatter grid and collimator through layer-wise solidification using a rapid prototyping technique; and coating the intermediate walls with a material which strongly absorbs at least one of x-radiation and gamma radiation (claim 4).

However, U. S. Patent No. 6,951,628 B2 does not claim that the step of forming transmission channels and intermediate walls includes at least in a first direction a center-to-

Art Unit: 2882

center spacing an integral multiple of a center-to-center spacing of sensitive detection regions of the detector, and a step of applying the at least one of the antiscatter grid and collimator to the detector surface and connecting the at least one of the antiscatter grid and the collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

Guru *et al.* disclosed an antiscatter grid or a collimator having a center-to-center spacing an integral multiple of a center-to-center spacing of sensitive detection regions (42) of the detector (40), the antiscatter grid or the collimator is connected to the detector surface in such a way that at least one of the intermediate walls (101) running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form transmission channels and intermediate walls that includes at least in a first direction a center-to-center spacing an integral multiple of a center-to-center spacing of sensitive detection regions of the detector and to apply the at least one of the antiscatter grid and collimator to the detector surface and connecting the at least one of the antiscatter grid and the collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface, since a person would be motivated to allow only radiations that are emanated directly from the radiation source to reach the detection regions.

With regard to claim 32, U. S. Patent No. 6,951,628 B2 claims the method as claimed in claim 31. However, U. S. Patent No. 6,951,628 B2 does not claim stereolithography as the rapid prototyping technique.

Guru *et al.* disclosed a rapid prototyping technique that uses stereolithography (column 4, lines 48-62). Guru *et al.* taught that CAD/STL files allow revisions of design parameters (column 5, lines 41-48).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use stereolithography as the rapid prototyping technique, since a person would be motivated to adopt a rapid prototyping technique that allows convenient modification of design parameters.

3. Claims 1-3, 4, 5, 6, 8, 13-18, 20, and 23-34 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5, 8, 14, 15 of U.S. Patent No. 6,980,629 B1 in view of Guru *et al.* (U. S. Patent No. 6,175,615 B1).

With regard to claims 1, 3, 8, 13-17, 25, and 26, U. S. Patent No. 6,980,629 B1 claims a method for producing an antiscatter grid and collimator comprising: producing a basic structure (base body) through layer-wise solidification by using a rapid prototyping technique to form transmission channels and intermediate walls of at least one of the antiscatter grid and collimator; and coating the intermediate walls with a material which strongly absorbs at least one of x-radiation and gamma radiation (claims 14 and 15).

However, U. S. Patent No. 6,951,628 B2 does not claim that the step of producing a basic structure includes at least in a first direction a center-to-center spacing at least one of equal to and an integral multiple of a center-to-center spacing of the sensitive detection regions of the

Art Unit: 2882

detector, and a step of applying at least one of the antiscatter grid and collimator to the detector surface and connecting at least one of the antiscatter grid and collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

Guru *et al.* disclosed an antiscatter grid or a collimator having a basic structure (100) including at least in a first direction a center-to-center spacing at least one of equal to and an integral multiple of a center-to-center spacing of the sensitive detection regions (42) of the detector (40), the antiscatter grid or the collimator is connected to the detector surface in such a way that at least one of the intermediate walls (101) running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to produce a basic structure including at least in a first direction a center-to-center spacing at least one of equal to and an integral multiple of a center-to-center spacing of the sensitive detection regions of the detector and apply at least one of the antiscatter grid and collimator to the detector surface and connecting at least one of the antiscatter grid and collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface, since a person would be motivated to allow only radiations that are emanated directly from the radiation source to reach the detection regions.

With regard to claims 2, 20, 23, and 24, U. S. Patent No. 6,980,629 B1 claims the method as claimed in claim 1. However, U. S. Patent No. 6,980,629 B1 does not claim stereolithography as the rapid prototyping technique.

Guru *et al.* disclosed a rapid prototyping technique that uses stereolithography (column 4, lines 48-62). Guru *et al.* taught that CAD/STL files allow revisions of design parameters (column 5, lines 41-48).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use stereolithography as the rapid prototyping technique, since a person would be motivated to adopt a rapid prototyping technique that allows convenient modification of design parameters.

With regard to claims 4, 27, and 28, U. S. Patent No. 6,980,629 B1 claims the method as claimed in claim 1, wherein the basic structure is produced from a material which is substantially transparent to at least one of x-radiation and gamma radiation, and end faces of the intermediate walls are kept free of the coating with the absorbing material (claims 5 and 8).

With regard to claim 5, 29, and 30, U. S. Patent No. 6,980,629 B1 claims the method as claimed in claim 1, wherein the basic structure is produced from a material which is substantially transparent to at least one of x-radiation and gamma radiation, and the coating with the absorbing material is removed from end faces of the intermediate walls (claims 5 and 8).

With regard to claims 6 and 18, U. S. Patent No. 6,980,629 B1 claims the method as claimed in claims 1 and 2, wherein the coating is performed by at least one of sputtering and electrolytic deposition (claim 12).

With regard to claims 31, 33, and 34, U. S. Patent No. 6,980,629 B1 claims a method for producing at least one of an antiscatter grid and collimator comprising: forming transmission channels and intermediate walls of at least one of the antiscatter grid and collimator through layer-wise solidification using a rapid prototyping technique; and coating the intermediate walls with a material which strongly absorbs at least one of x-radiation and gamma radiation (claims 14 and 15).

However, U. S. Patent No. 6,980,629 B1 does not claim that the step of forming transmission channels and intermediate walls includes at least in a first direction a center-to-center spacing an integral multiple of a center-to-center spacing of sensitive detection regions of the detector, and a step of applying the at least one of the antiscatter grid and collimator to the detector surface and connecting the at least one of the antiscatter grid and the collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

Guru *et al.* disclosed an antiscatter grid or a collimator having a center-to-center spacing an integral multiple of a center-to-center spacing of sensitive detection regions (42) of the detector (40), the antiscatter grid or the collimator is connected to the detector surface in such a way that at least one of the intermediate walls (101) running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form transmission channels and intermediate walls that includes at least in

Art Unit: 2882

a first direction a center-to-center spacing an integral multiple of a center-to-center spacing of sensitive detection regions of the detector and to apply the at least one of the antiscatter grid and collimator to the detector surface and connecting the at least one of the antiscatter grid and the collimator to the detector surface in such a way that at least one of the intermediate walls running perpendicular to the first direction and their coating are situated over relatively less sensitive intermediate regions of the detector surface, since a person would be motivated to allow only radiations that are emanated directly from the radiation source to reach the detection regions.

With regard to claim 32, U. S. Patent No. 6,980,629 B1 claims the method as claimed in claim 31. However, U. S. Patent No. 6,980,629 B1 does not claim stereolithography as the rapid prototyping technique.

Guru *et al.* disclosed a rapid prototyping technique that uses stereolithography (column 4, lines 48-62). Guru *et al.* taught that CAD/STL files allow revisions of design parameters (column 5, lines 41-48).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use stereolithography as the rapid prototyping technique, since a person would be motivated to adopt a rapid prototyping technique that allows convenient modification of design parameters.

Allowable Subject Matter

4. Claims 7, 9-12, 19, 21, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 18 April 2006 with respect to claims 5, 29, and 30 have been fully considered and are persuasive. The objection of claims 5, 29, and 30 has been withdrawn.

6. Applicant's arguments with respect to claims 1-4, 6-28, and 31-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Crawford (U. S. Patent No. 6,936,212 B1) disclosed a method of forming a three-dimensional object.
- (2) Ueno (U. S. Patent No. 6,627,376 B1) disclosed a stereolithographic apparatus and method for manufacturing three-dimensional object.
- (3) Gervasi (U. S. Patent No. 6,309,581 B1) disclosed a method of making a three-dimensional object.
- (4) Pellegrino *et al.* (U. S. Patent No. 5,606,589) disclosed an antiscatter grid having a layered structure.

Art Unit: 2882

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2882

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho, Ph.D.
Primary Examiner
Art Unit 2882

08 May 2006